

ITS Professional Capacity Building (PCB) Program: Incorporating a Focus on Technology Transfer

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*Ubiquitous
Society with
ITS!*

ITS Strategic Research

Vision: National, multi-modal surface transportation system that features a connected transportation environment among vehicles (cars, trucks, buses, fleets of all kinds), the infrastructure, and mobile devices to serve the public good by leveraging technology to maximize safety, mobility and environmental performance. Connectivity is achieved through dedicated short range communications (DSRC).

Goal: Safety

- Vehicle to Vehicle Communications for Safety
- Vehicle to Infrastructure Communications for Safety

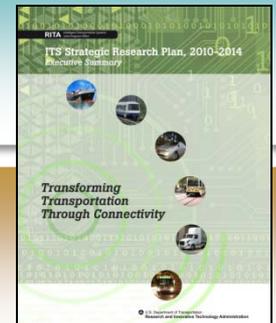
Goal: Mobility/Accessibility/Reliability

- Real-Time Data Capture and Management
- Dynamic Mobility Applications including Weather

Goal: Environment

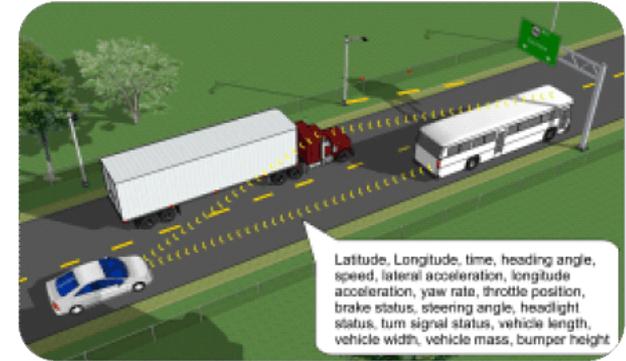
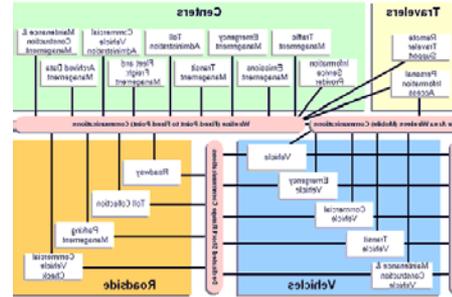
Applications for the Environment: Real-Time Information Synthesis (AERIS)

Real-time, environmental data from all sources will be integrated and available for use in multimodal transportation management and performance improvement and will contribute to better environmental practices.



ITS Strategic Research Program, 2010-2014

- Focused on Connectivity
- Four Program Elements:
 - Intellidrive Research
 - Applications research
 - Technology research
 - Policy research
 - ITS Modal Applications: new highway, transit, rail, and maritime applications
 - ITS Cross-Cutting Programs
 - ITS Professional Capacity Building for a high performing workforce
 - ITS Architecture and ITS Standards for planning and interoperability
 - ITS Evaluation to produce knowledge on cost, benefits, lessons learned, and deployment tracking
 - ITS Exploratory Initiatives: Soliciting new and innovative ideas



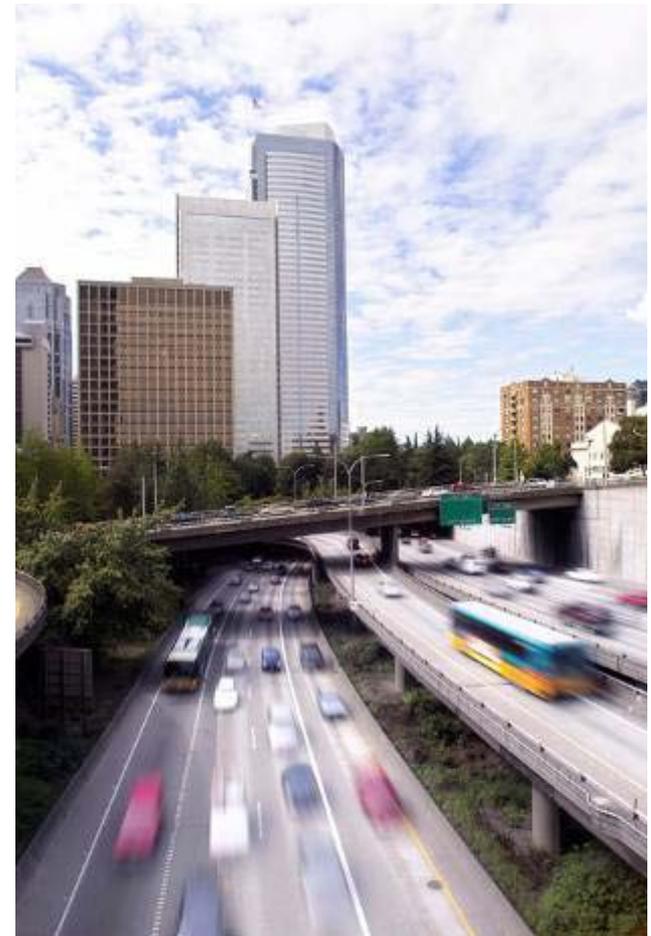
Where does Technology Transfer fit in?

- Accelerate the transformation of ITS research and prototypes into market-technologies that are more readily adopted by agencies
- Catalyze marketplace adoption — commercialization is a key mechanism in ensuring timely, broad, and nationwide access to new products
- Two recent government-industry R&D collaborations offer some highlights about the willingness of US DOT to engage in the R&D process and embrace new technologies developed in the private sector:
 - Integrated Corridor Management
 - Mobility Services for All Americans



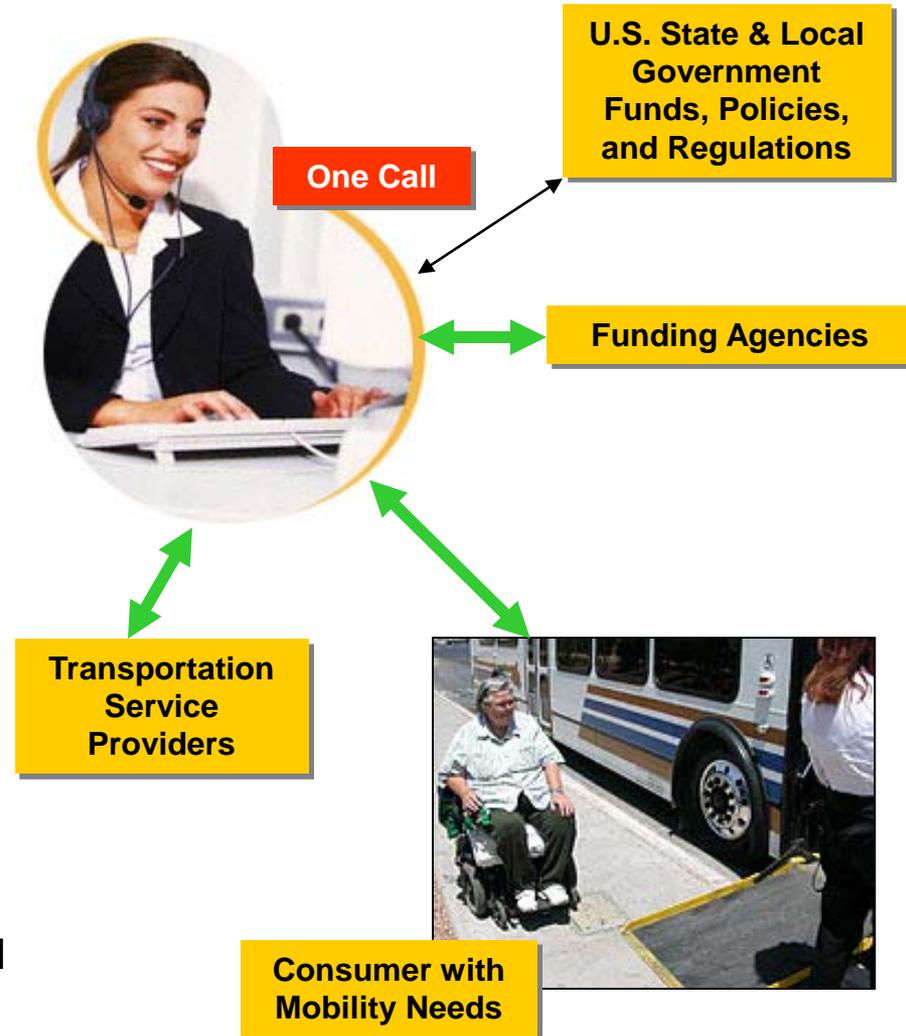
Integrated Corridor Management

- ICM is a **promising tool** in the congestion management toolbox that combines advanced technologies and innovative practices.
- ICM **optimizes the use of existing commercial infrastructure assets**, making transportation investments go farther.
- ICM is the **proactive, joint, multimodal management of transportation infrastructure** assets along a corridor by transportation system operators and managers.
- With ICM, **the corridor is managed as a system**—rather than the more traditional approach of managing individual assets.
- In final stages of development, with **two sites** demonstrating new product capabilities.



Mobility Services for All Americans

- Major US DOT ITS initiative
- Demonstration of **T**ravel **M**anagement **C**oordination **C**enters (TMCC) that provide:
 - Simplified point of access
 - Comprehensive set of services and
 - Utilize ITS
- One call / no wrong door
- Multi-media and flexible access (phone, text messaging, IVR, kiosk, internet, 24X7, live operators, etc.)
- Travelers manage own accounts
- Service flexibility
- Customer information sharing (e.g., eligibility and certification)
- Easy fare payment or ID card
- Quick performance monitoring, billing and reporting
- Safety and security



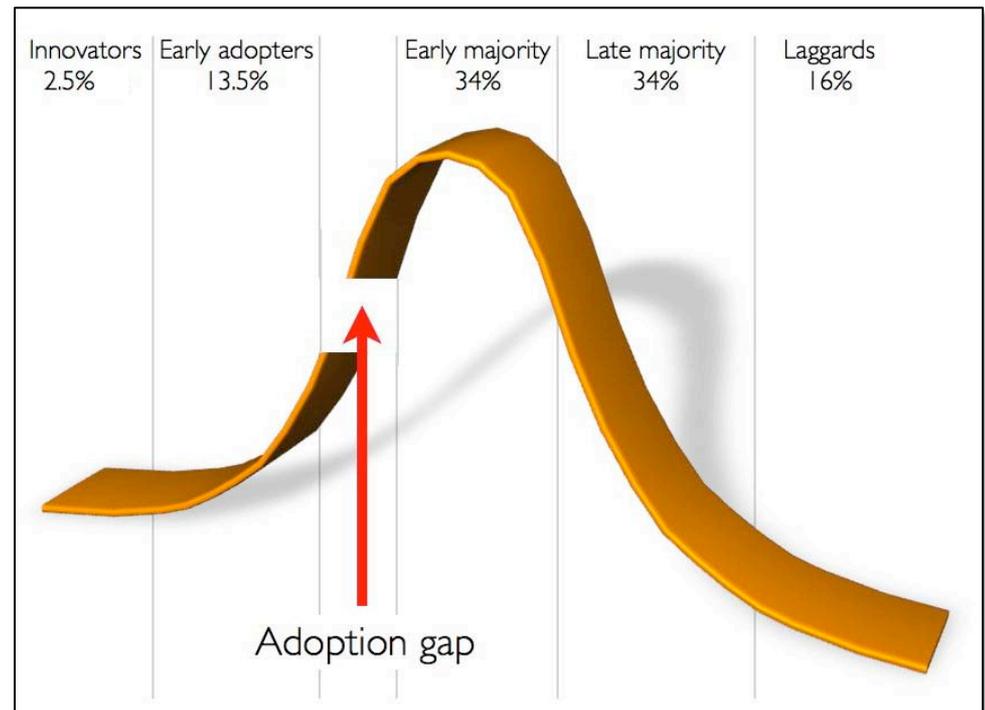
Challenges Facing ITS Adoption

- ITS not mainstreamed as part of the transportation planning process.
- Organizations focused on proven products and techniques vs. adopting innovation.
- Technology evolves quickly.
- Organizations may lack professional capacity to deploy ITS.
- In almost real-time, agencies are faced with technology *investment and use* decisions that will transform their operations to better meet demand and new requirements:
 - Service
 - Performance
 - Accountability
 - System Transparency



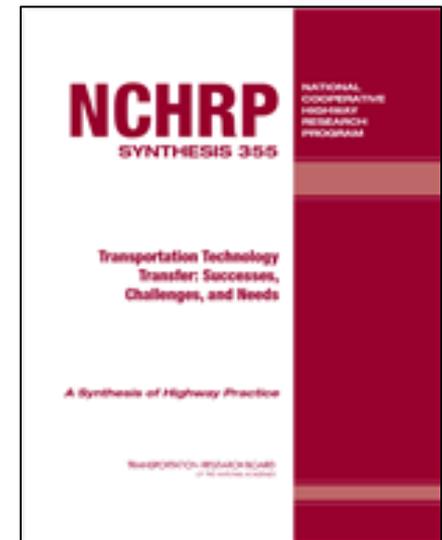
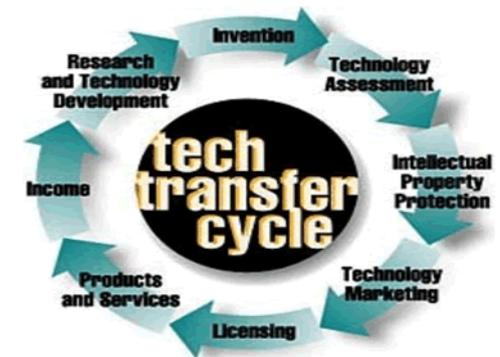
How Can Professional Capacity Building Accelerate Technology Adoption?

- Program is focused on supporting successful deployment practices
- ITS PCB and technology transfer utilize similar mechanisms and activities for knowledge transfer – training, communications, technical assistance
- *Fast and successful adoption*, is highly dependent upon a workforce that is:
 - Aware of new technologies and research results
 - Knowledgeable about procurement and specifications
 - Skilled in incorporating them into existing systems
 - Trained to oversee the implementation process from a systems perspective
 - Capable of putting them into use



Key Elements of Technology Transfer

- National Cooperative Highway Research Program (NCHRP)* recognizes key elements in successful technology transfer as:
 - Focus on pushing technology into user environment
 - Champions
 - Pilots and demonstrations that allow hands-on learning/lessons learned
 - Lead Adopter examples and guidance
 - Early involvement of users for early resolution of problems
 - Clear plan for targeting early implementers with the right support
 - Emphasis on communications



ITS PCB Strategy



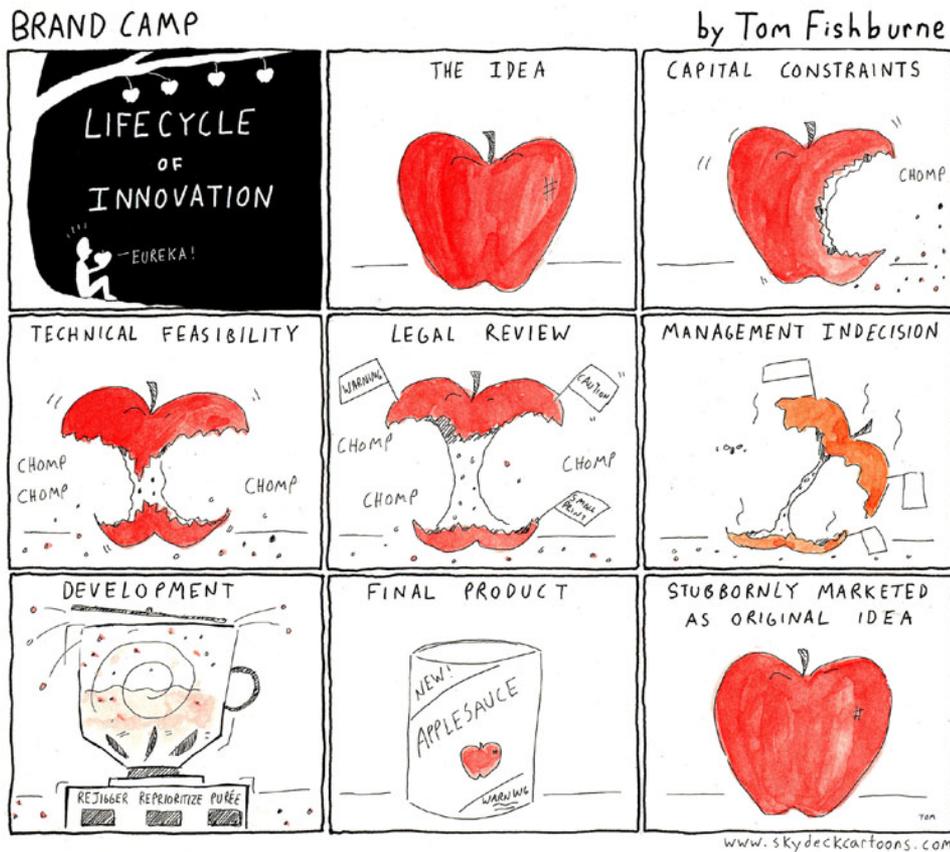
Vision: Develop an ITS profession that leads the world in research, deployment, and innovative use of ITS technologies.

Reinvigorated and Refocused Program

- **Connect** – Broker for knowledge exchange and learning:
 - Create additional depth and breadth for ITS training and education
 - Provide mechanism for targeting the right audience with the right resources at the right time
 - University Transportation Centers
 - Professional Associations
- **Accelerate** technology transfer by:
 - Migration to new, more real-time web-based and virtual training formats.
 - A significant upgrade to current ITS Standards training resources with the notion that standards enable technology adoption
 - Continued and strategic use of existing formats such as the Talking Technology and Transportation (T3) webinars, the peer-to-peer technical exchange program, and the blended learning instructional courses
- **Communicate** – Widen efforts to blog and tweet at knowledge transfer events in real-time
- **Evaluate** – Continuously monitor strategy for effectiveness and improvement opportunities.



Strategic Focus Area of Innovation



- Concerned with accelerating technology transfer
- Technology as an enabler – social media, mobile application devices, new learning practices such as interactive games and video

Innovation

Innovation Goals

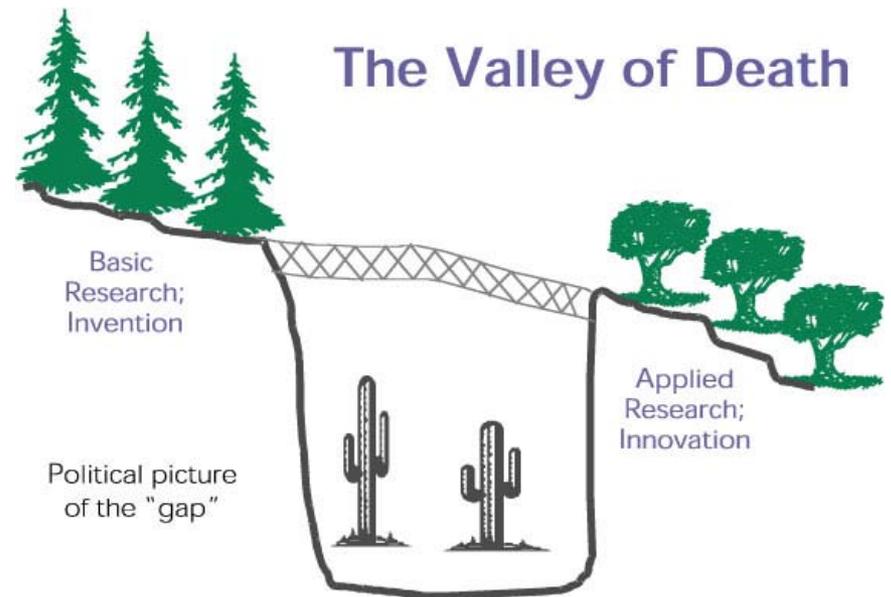


- Accelerate the movement of ITS technology research into deployment.
- Reach out to universities and professional associations to deliver leading edge knowledge faster.
- Incorporate evaluation practices into research to get to market faster.
- Make effective use of new, innovative delivery mechanisms (i.e. videoconferencing, gaming, social networks).
- Forge public-private partnerships.



New ITS PCB Approach: Targeted Audiences

- More specifically target audiences (through partnerships with professional associations who have more direct access) who will benefit from use of the new technologies
- Deliver a more focused approach
 - “Why adopt this technology?”
 - “How do I successfully adopt and use it?”
- Provide learning at the right time, when the user needs it.



New ITS PCB Approach: Faster Adoption

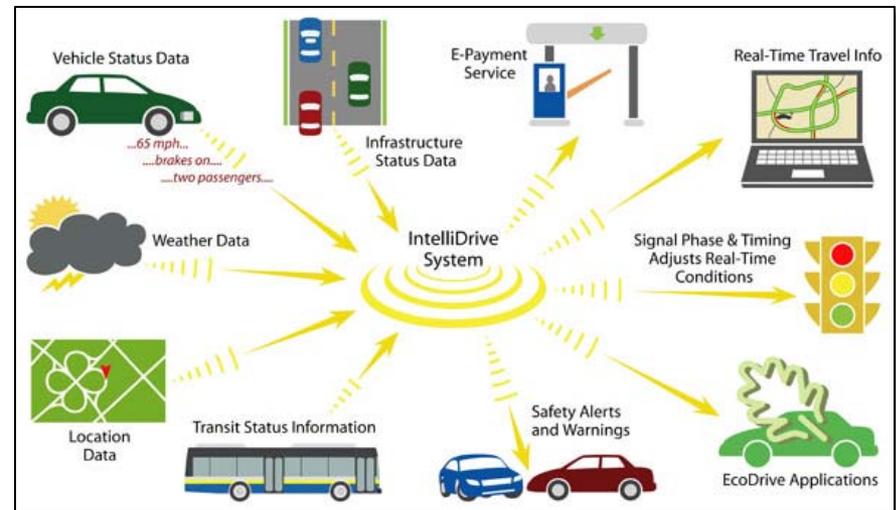
Plans will be developed with research managers to identify how outreach and professional capacity building can be integrated into the technology development, testing, and evaluation lifecycle.

- Identify the key learning for the technologies that will be needed for successful public sector adoption .
- Develop and deliver appropriate awareness, learning, and technical assistance.
- How do I implement?
- What are deployment issues?
- Developing market demand which will lead to greater market sustainability.
- Address the private sector requirements and timing for technology adoption.
- Engage the private sector, (system integrators, manufacturers, and vendors) with an awareness of the training opportunities for their participation as well.
- Produce guidelines and training on how the private sector can participate in the ITS test beds.



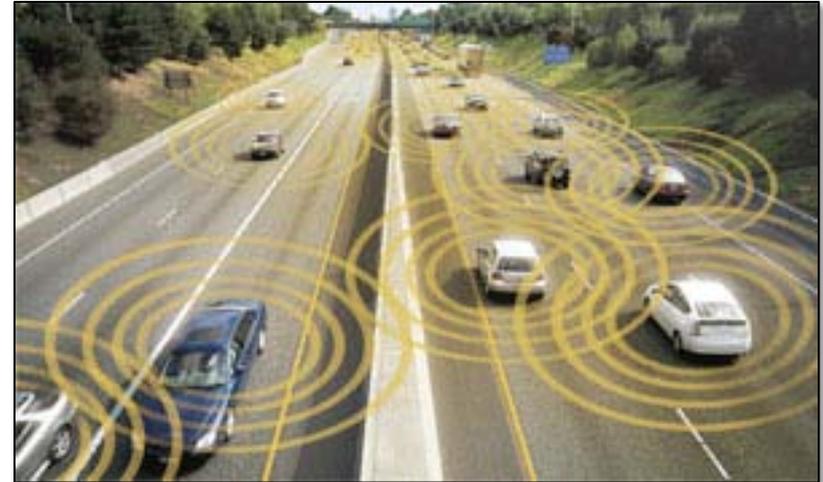
New: Connectivity and Interoperability

- Deliver a data-rich, information-intensive, fully-connected transportation environment for the Nation.
- Interoperability is a fundamental underpinning of connectivity:
 - Primary focus on the use of the ITS architecture and ITS standards
 - Growing use of ITS standards and system enterprise architectures
 - Extends existing systems
 - Faster incorporation of technologies into these systems
- Evolution will require:
 - New workforce skills that embrace technology evolution.
 - The need for a greater focus on systems engineering in order to make investments in ITS successful.



Next Steps

- ITS PCB analyzing technology transfer best practices.
- Possible approaches modeled on:
 - Department of Defense
 - National Laboratories
 - University technology transfer programs
 - Private sector programs
- Outcome to produce set of recommendations that can be implemented in near term and addresses current challenges in ITS operations and deployment.
- Discussion with industry stakeholders regarding their expectations for technology transfer.



Conclusion

- *Vision: develop an ITS profession that leads the world in research, deployment, and innovative use of ITS technologies.*
- The technology transfer strategies will:
 - Enhance our ability to transfer research into market and commercial opportunities;
 - Seek and engage with partners who can help carry out our vision; and
 - Create a more effective program that better serves our transportation industry.



Updated October 16, 2010

ITS Professional Capacity Building Program

Welcome to ITS Professional Capacity Building

The ITS Professional Capacity Building (PCB) Program provides comprehensive, accessible, and flexible ITS learning for the transportation industry. By using the program's, public agencies can build and sustain a capable and technically proficient ITS workforce and transportation professionals can develop their knowledge, skills, and abilities while furthering their career paths.

ITS Technical Assistance

The ITS PCB Program offers technical assistance resources to State and local transportation agencies, and to FHWA Field Offices.

- [ITS Peer-to-Peer Program](#) helps resolve ITS challenges by speaking to your peers.
- The ITS Help Line provides [technical support by e-mail](#) or telephone 866-367-7487.

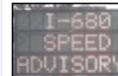
News

[Contribute to the strategic direction of the ITS PCB program!](#)

- [Added to the T3 Archives: 8/3/10 Webinar: TSAG Case Studies Workshop and Webinar — 2009 Fort Hood, Texas Army Base Shooting Incident: A Multi-Agency Emergency](#)
- [Presentations by Mac Lister, ITS PCB Program Manager, at 2010 ITSA Annual Meeting](#)
- [Added to the T3 Archives: 10/27/09 Webinar: National ITS Architecture Update: New Features of the Latest Version of the National ITS Architecture \(Version 6.1\)](#)
- [Added to the T3 Archives: 10/21/09 Webinar: Transit Operations Decision Support Systems \(TODSS\): A USDOT Pilot Expert System for Transit Bus Fleet Management](#)
- [Webinar: Advancing Road Weather Management Using *Clarus* Data](#)
- [Added to the T3 Archives: 8/26/09 Webinar: TSAG Case Studies Workshop and Webinar: A Rural Emergency Incident — Utah US Route 163 Motor Coach Crash](#)
- [Added to the T3 Archives: 8/18/09 Webinar: Where is the "IT" in ITS?](#)
- [News from Partners: Free IDAS course from NHI. CITE blended now courses available.](#)
- [View CITE's current offering of blended courses](#)
- [TMC Simulation Program available from I-95 Corridor Coalition](#)

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Scheduled T3 Webinars



October 20, 2010; 1:00–2:30 P.M. ET: [Open Source Approach to Transportation Management Systems](#)

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ITS Learning Resources

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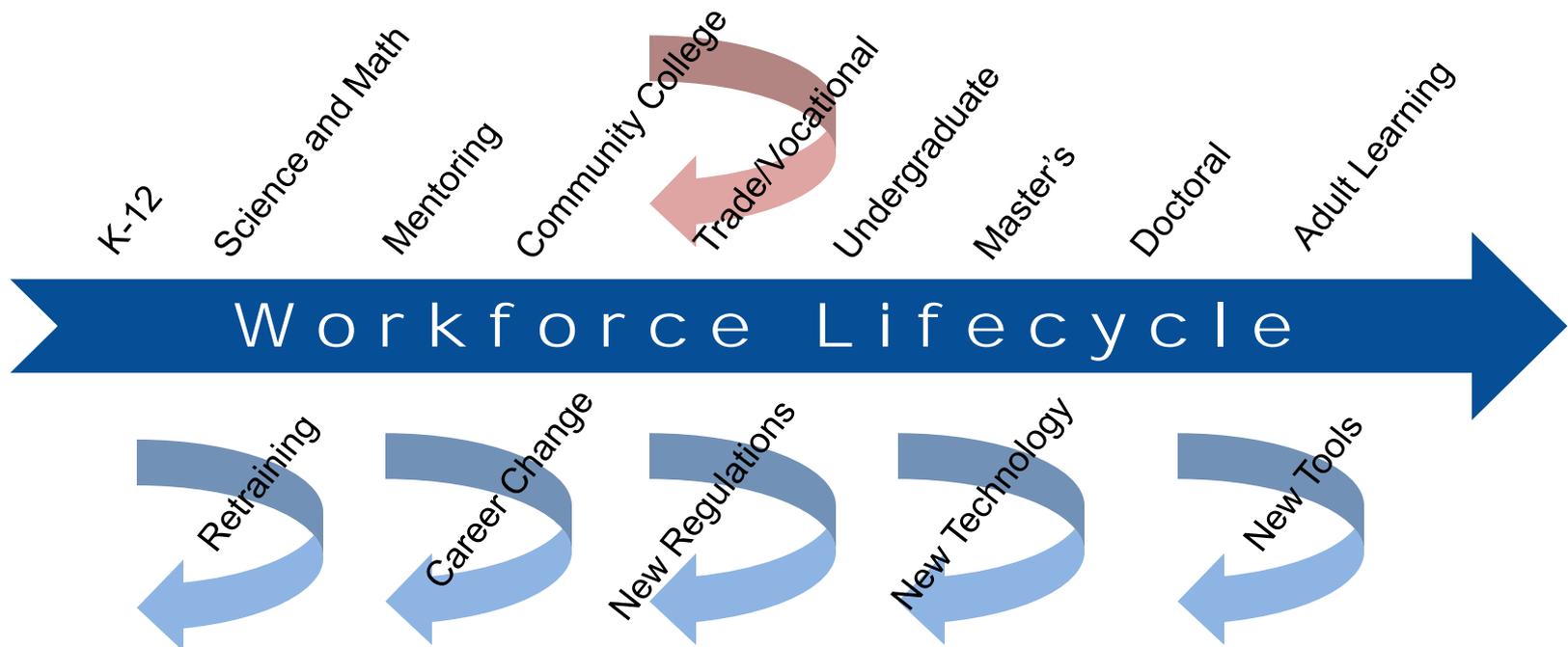
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Commitment to Workforce Development

- Not just technology or policy – the people are important
- We are serious about the need to attract, recruit, orient, retain, develop, and mentor a diverse, engaged, collaborative, and high performance workforce:
 - In collaboration with stakeholders, launch a multimodal workforce development initiative that anticipates demographic shifts
 - Increase the education and training level of the workforce



Thank You for Your Attention



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